

FIG. 1

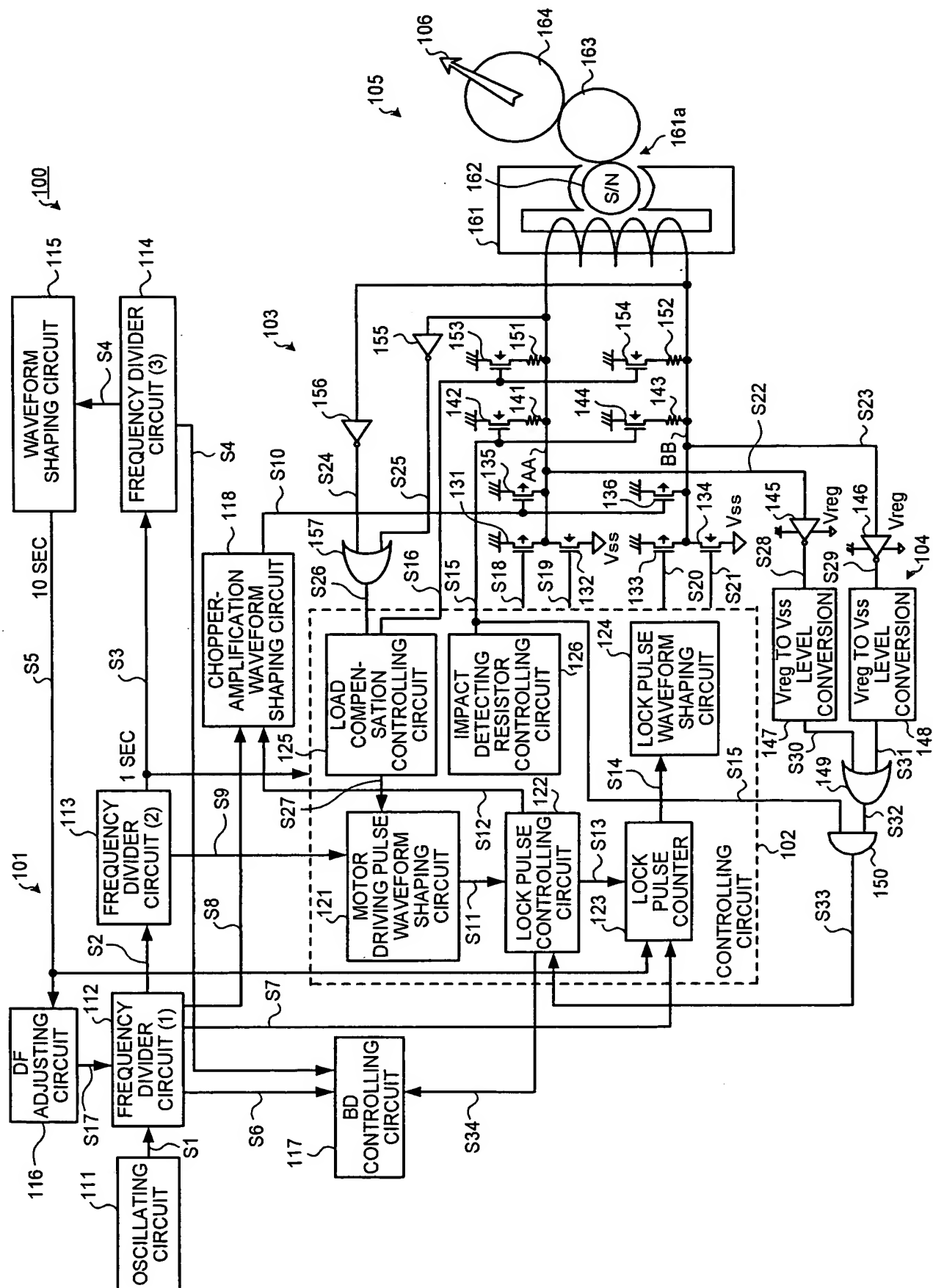


FIG.2

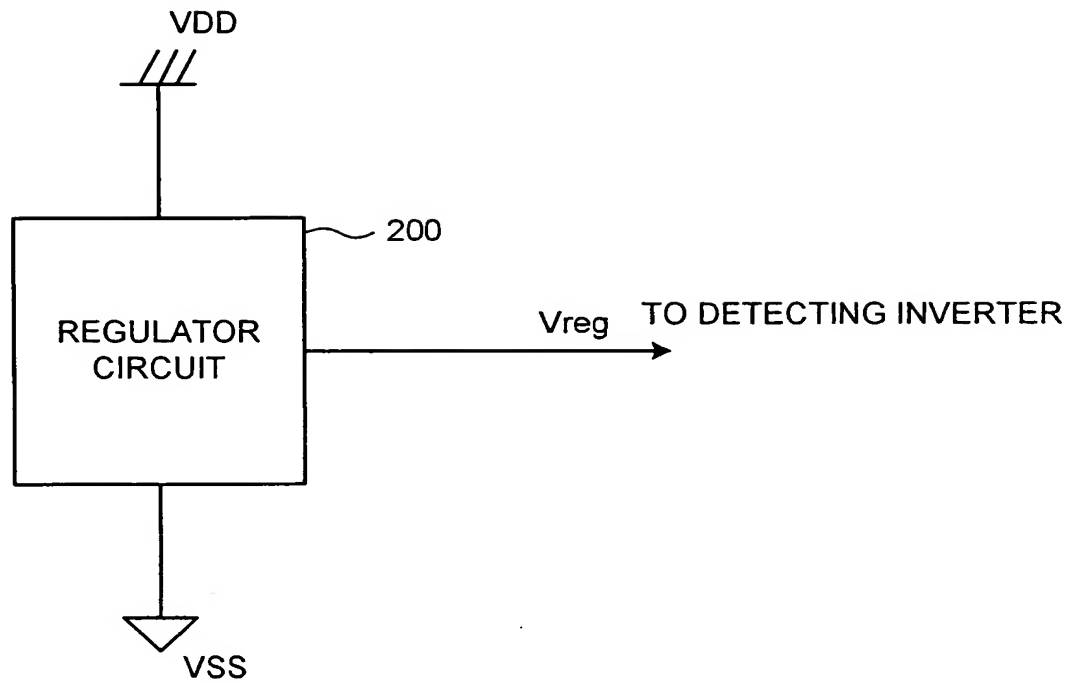


FIG.3

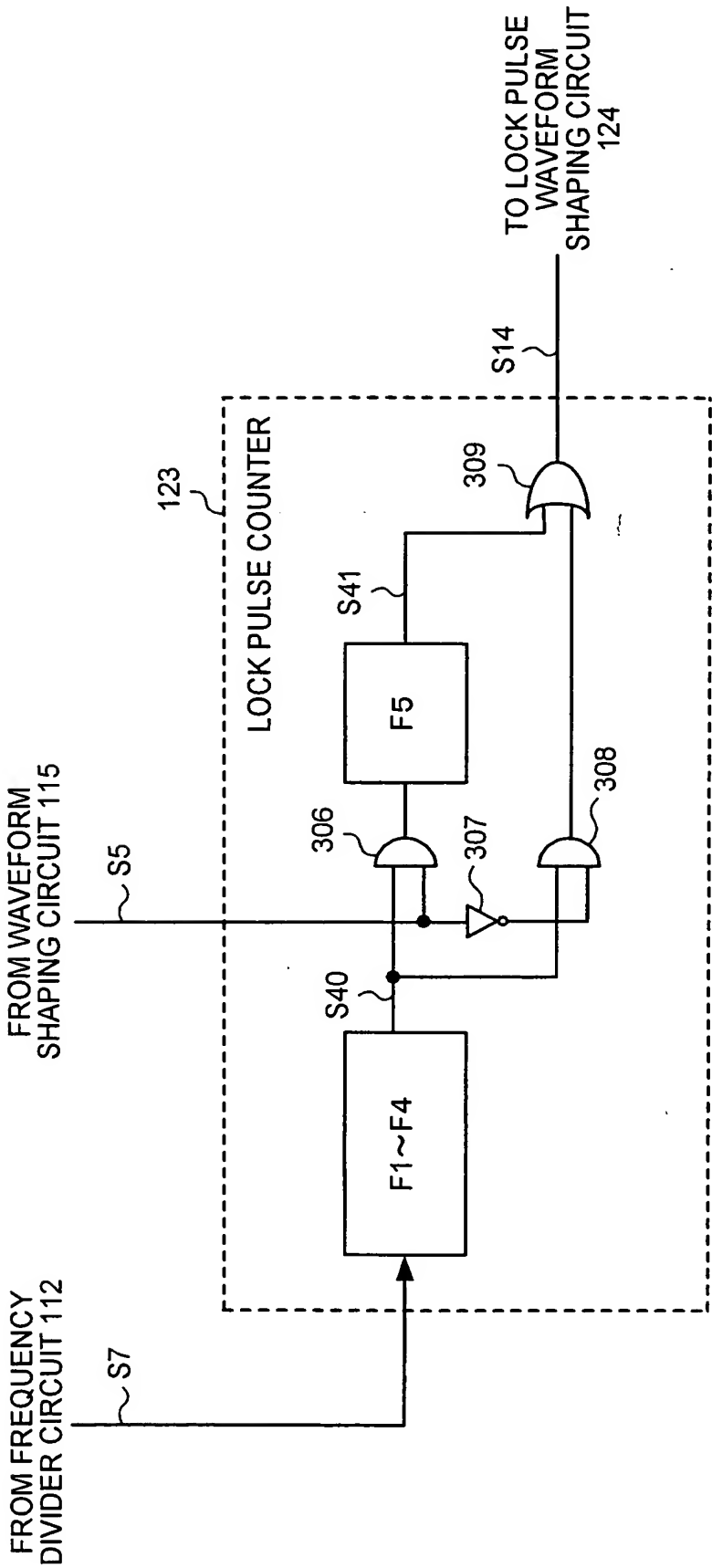
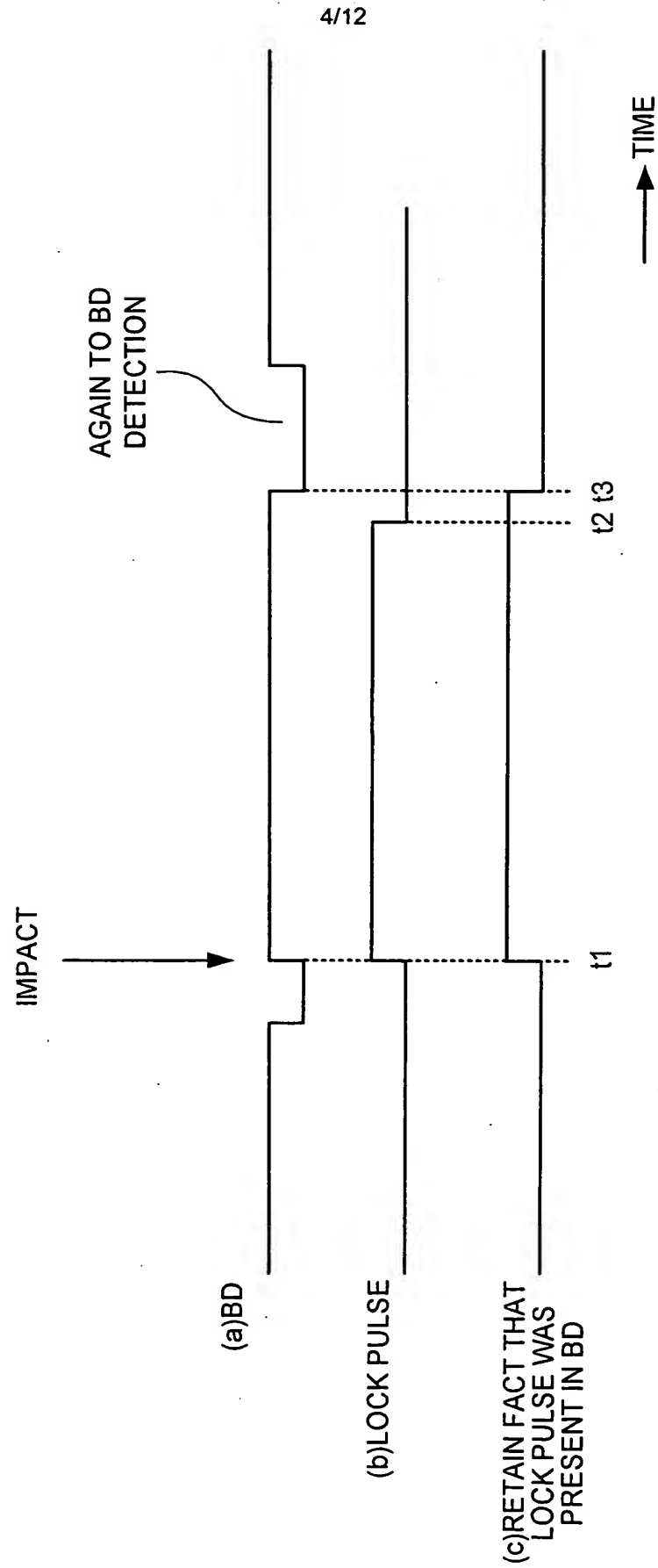


FIG.4



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FIG.5

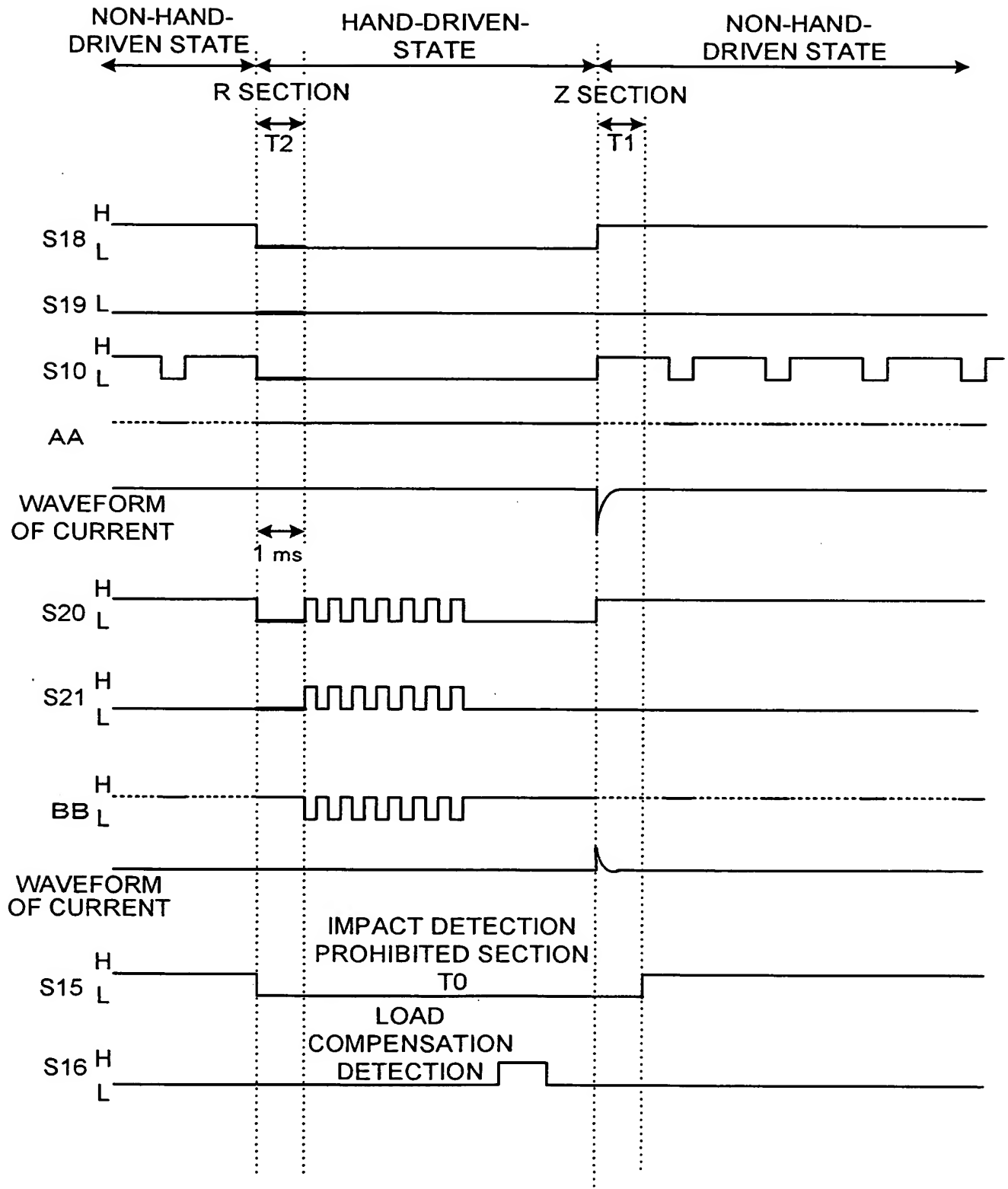
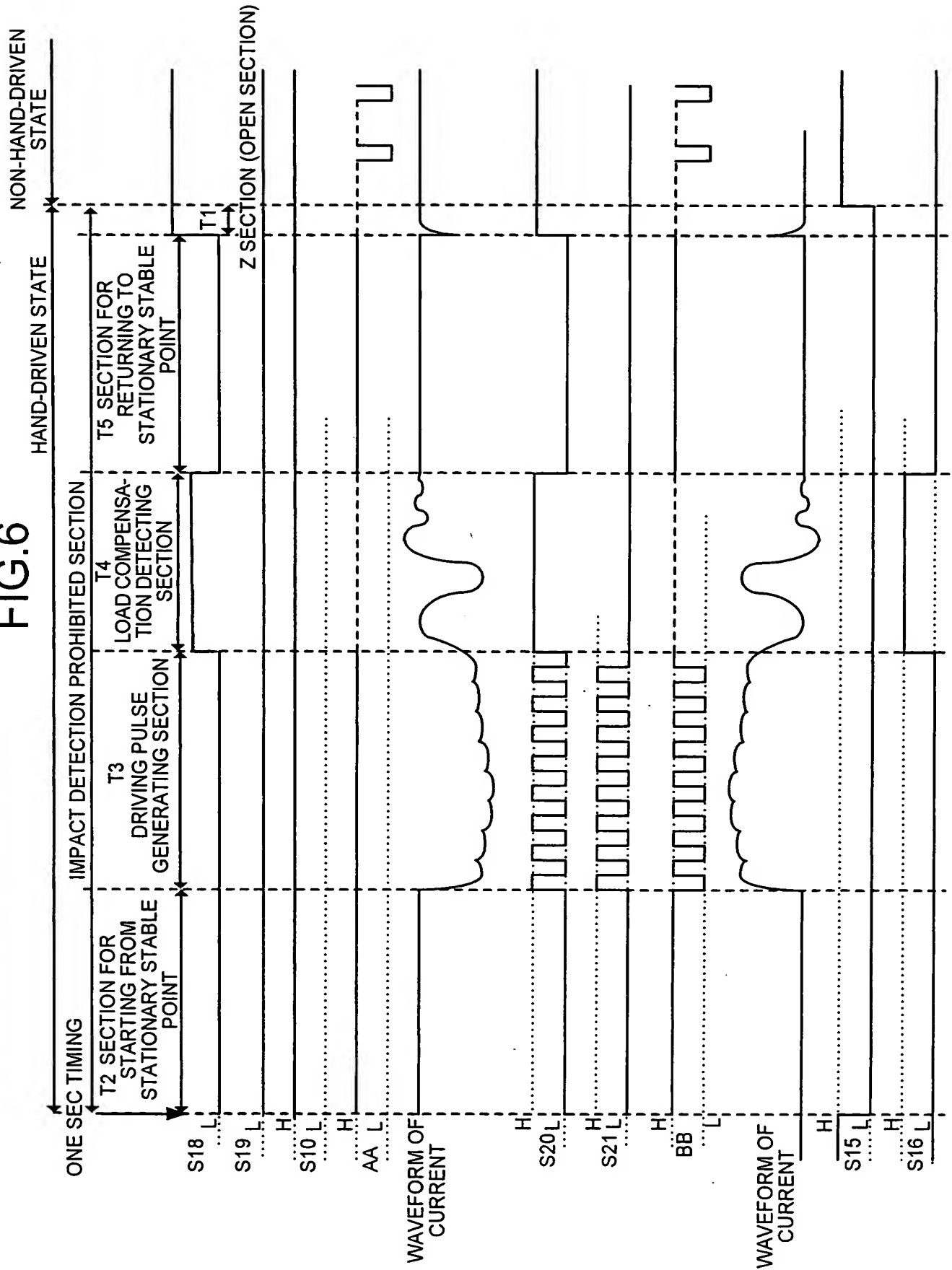
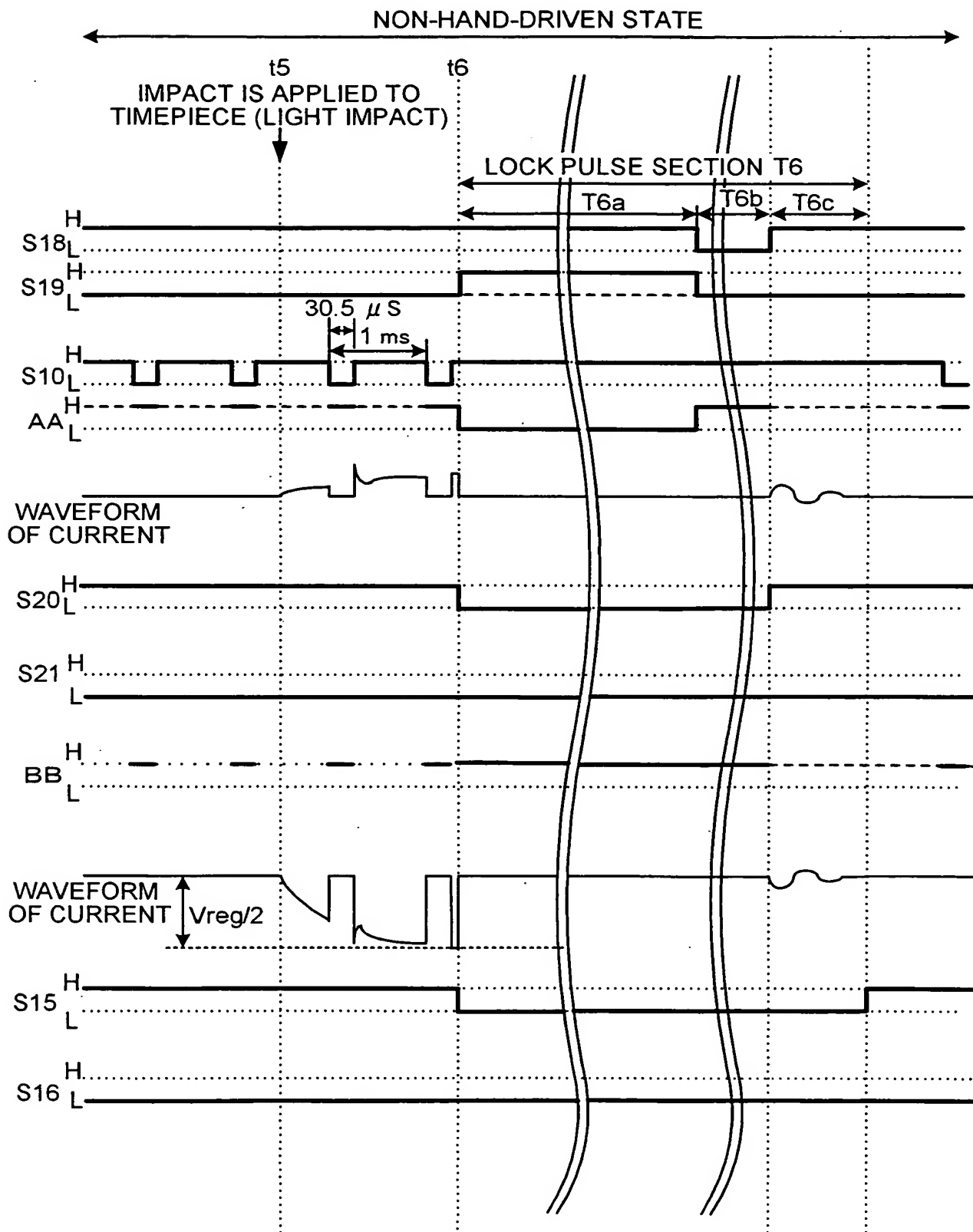


FIG.6



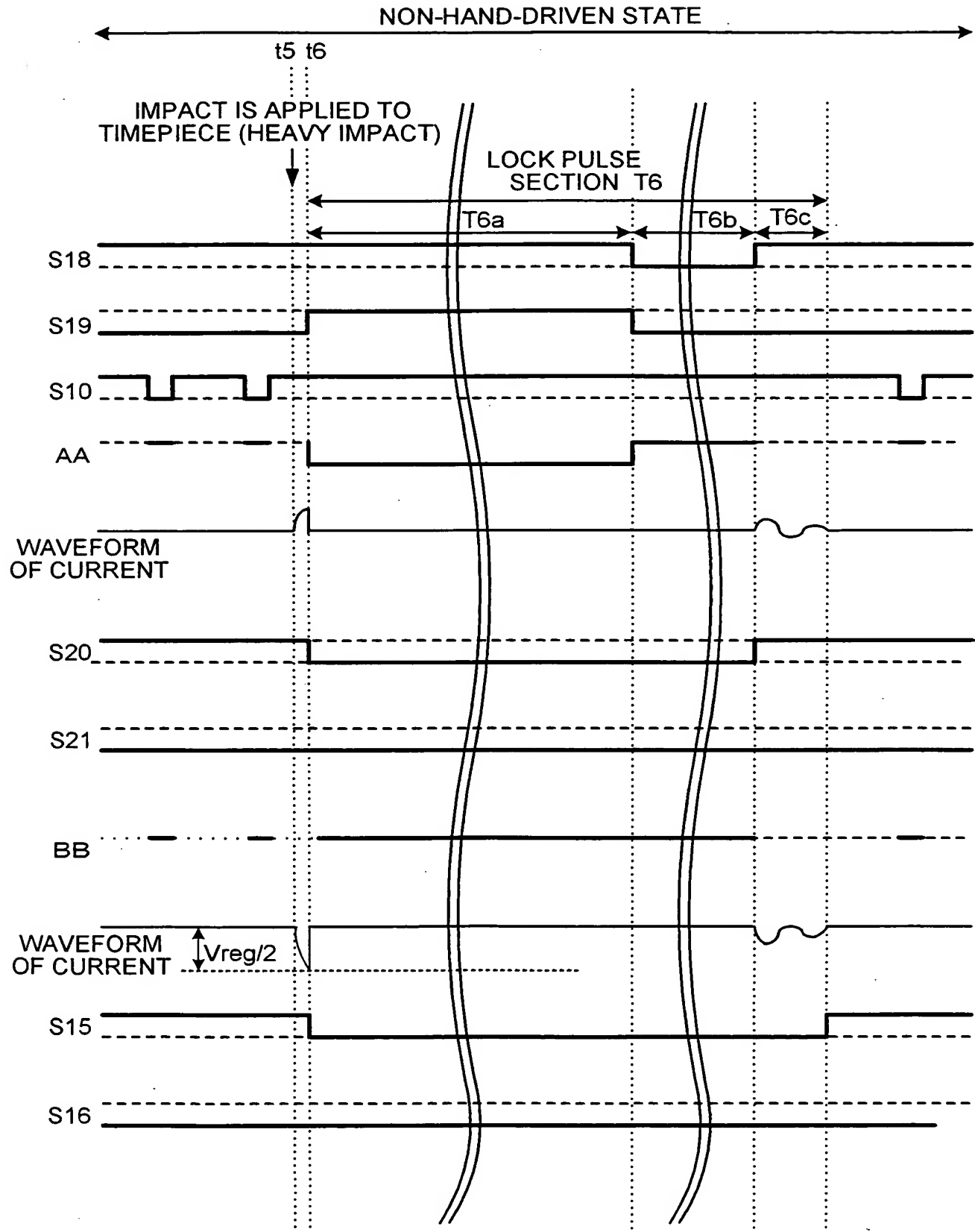
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FIG.7



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FIG.8



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FIG.9

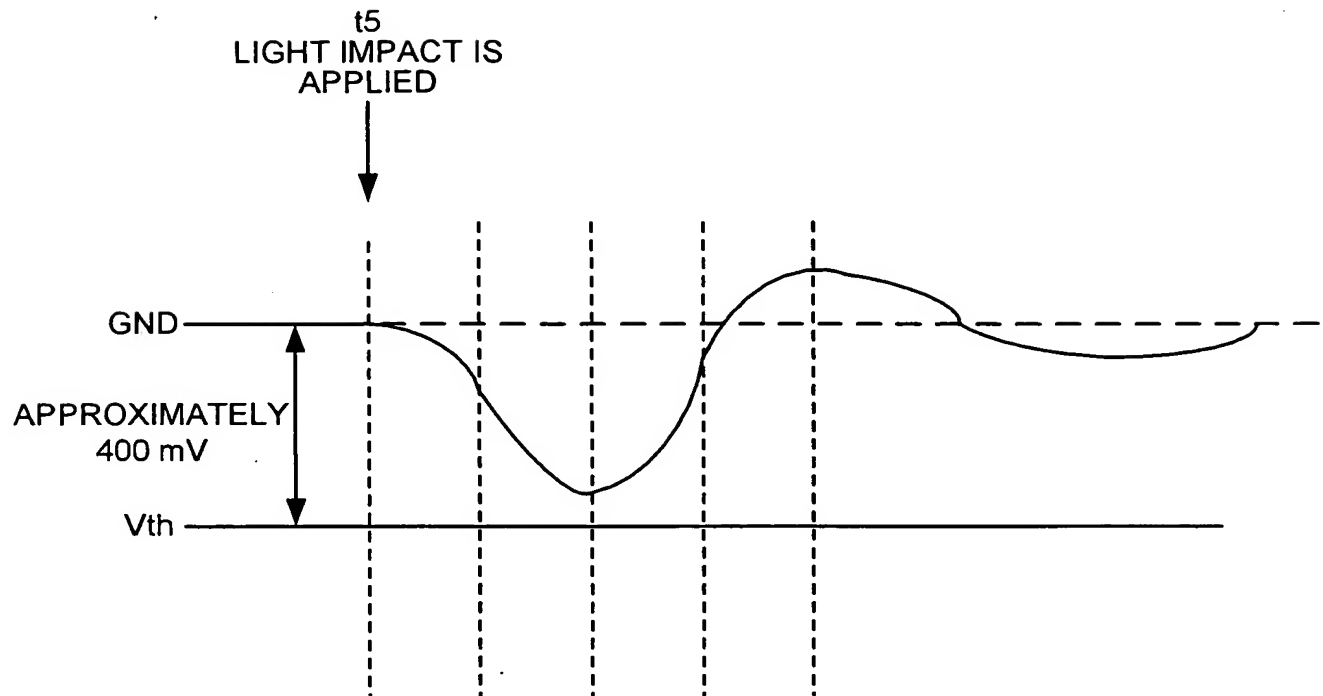


FIG.10

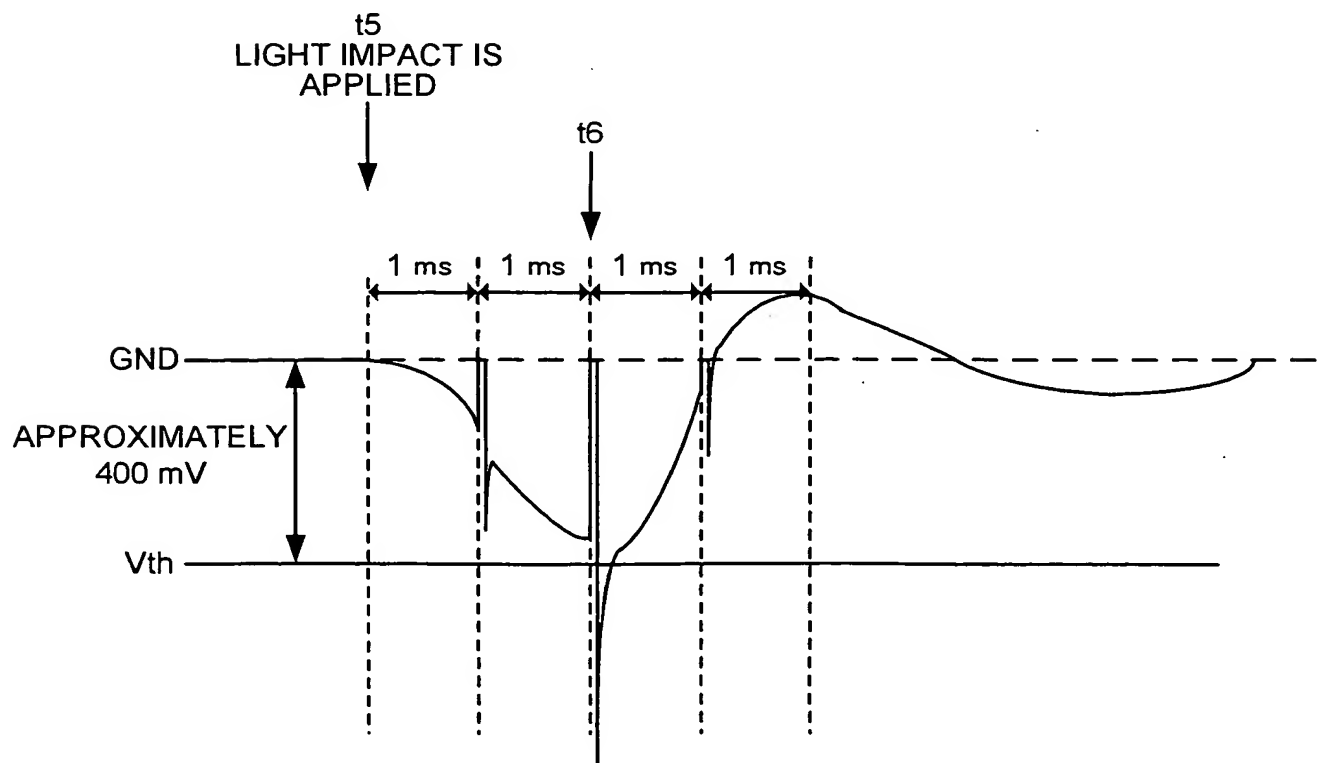


FIG.11

PERIOD	CHOPPER-WIDTH	DETERMINATION	REMARK
2 ms	61 μ S	x	WAVE-SHAPED BOOM GENERATED WHEN LIGHT IMPACT IS APPLIED LASTS APPROXIMATELY 2 MS AND DETECTION IS TOO LATE.
2 ms	30.5 μ S	x	WAVE-SHAPED BOOM GENERATED WHEN LIGHT IMPACT IS APPLIED LASTS APPROXIMATELY 2 MS AND DETECTION IS TOO LATE.
1 ms	61 μ S	x	TIME FROM RECEPTION TO DETECTION OF IMPACT (LIGHT IMPACT) IS AS SHORT AS 36 μ S AND DETECTION IS IMPOSSIBLE WHEN IMPACT IS RECEIVED WITHIN CHOPPER.
1 ms	30.5 μ S	O	BOTH OF DETECTION SENSITIVITY AND POWER CONSUMPTION ARE EXCELLENT
0.5 ms	61 μ S	x	DETECTION SENSITIVITY IS MOST EXCELLENT, HOWEVER, POWER CONSUMPTION IS INCREASED BECAUSE CHOPPERS MOVE FAST.
0.5 ms	30.5 μ S	x	DETECTION SENSITIVITY IS EXCELLENT, HOWEVER, POWER CONSUMPTION IS INCREASED BECAUSE CHOPPERS MOVE FAST.

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FIG.12

	30 cm	40 cm	50 cm	60 cm
1.8 (V)	OK	OK	OK	OK
1.7 (V)	OK	OK	OK	OK
1.6 (V)	OK	OK	OK	OK
1.5 (V)	TWO-SECOND DELAY	TWO-SECOND DELAY	TWO-SECOND DELAY	TWO-SECOND DELAY
1.4 (V)	TWO-SECOND DELAY	TWO-SECOND DELAY	TWO-SECOND DELAY	TWO-SECOND DELAY
1.35 (V)	OK	TWO-SECOND DELAY	TWO-SECOND DELAY	TWO-SECOND DELAY
1.25 (V)	TWO-SECOND DELAY	TWO-SECOND DELAY	—	—

IMPACT DETECTING RESISTOR: 5 k Ω , LOCK PULSE SHAPE: LOCK TERM 5 ms,
STABLE TERM 5 ms, INSENSITIVE TERM 1 ms
MOTOR DRIVERS: TWO HAND BIASED WEIGHT: 5 mgm

FIG.13

	30 cm	40 cm	50 cm	60 cm
1.8 (V)	OK	OK	OK	OK
1.7 (V)	OK	OK	OK	OK
1.6 (V)	OK	OK	OK	OK
1.5 (V)	OK	OK	OK	OK
1.4 (V)	OK	OK	OK	OK
1.35 (V)	OK	OK	OK	OK
1.25 (V)	OK	OK	OK	OK

IMPACT DETECTING RESISTOR: 5 k Ω , LOCK PULSE SHAPE: LOCK TERM 10 ms,
STABLE TERM 5 ms, INSENSITIVE TERM 1 ms
MOTOR DRIVERS: TWO HAND BIASED WEIGHT: 5 mgm

